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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/675,299

09/30/2003

Richard Aufrichtig

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7590

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EXAMINER

TRAN, NHAN T

ART UNIT

PAPER NUMBER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/675,299

Applicant(s)

AUFRICTIG ET AL.

Examiner

Nhan T. Tran

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 9/30/2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Objections***

2. Claim 7 is objected to because of the following informalities:

The recitation of "the pixel map. Over" should be corrected to read as -- the pixel map over --. Appropriate correction is required.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. **Claims 13 & 14** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claim 4** of U.S. Patent No. **6,661,456**.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 13 & 14 of the instant application are broader in every aspect than the patent claim 4 and are therefore obvious variants thereof.

4. **Claims 1, 2, 7 & 8** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1 & 3** of U.S. Patent No. **6,661,456** in view of **Cok et al. (US 6,104,839)**.

Claims 1, 2, 7 & 8 of the instant application are met by the patent claims 1 & 3 in every aspect except for the limitations of a user selecting a display of at least a portion of the created pixel map. However, it is well recognized by Cok in Figs. 2A-2C that a user can select a display of at least a portion of the created map (Fig. 2B) of defective pixels as a region of interest for detail view of the defective region (Fig. 8) so as to accurately perform pixel correction (see Cok, col. 4, lines 8-30).

Therefore, it would have been obvious to one of ordinary skill in the art to provide selective display of the pixel map over the image by a user selecting display of at least a portion of the created pixel map in view of the teaching of Cok so that the user would be able to select and view details of defective region for accurate pixel correction.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 6-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Cok et al. (US 6,104,839).

Regarding claim 1, Cok discloses a method for displaying an image (Figs. 2A-D, 7 & 8) generated by at least one detector of an imaging unit (image reader 20 shown in Fig. 1), the method comprising:

creating a pixel map (defective pixel map shown in Fig. 2B) identifying locations of bad pixels in an array of pixels in the image detected by the at least one detector, the bad pixels behaving from a group including pixels (defective pixels) which do not respond electrically and pixels which are statistically different from surrounding pixels in the array of pixels (see Figs. 2A & 2B; col. 4, lines 5-20, wherein defective pixels are presented by black pixels or logic zero while non-defective pixels are represented by white pixels or logic one);

linking the pixel map to the image (Figs. 2A-2C); and providing for selective display of the pixel map over the image by a user selecting a display of at least a portion of the created pixel map (see col. 4, lines 21-30).

Regarding claim 2, Cok also discloses that a graphical overlay with graphical symbolic representations of the bad pixels is superimposed on the image as shown in Figs. 2A-2C, 7 & 8.

Regarding claim 6, as shown in Fig. 2C, col. 4, lines 21-30, an area of the image can be selected (window 27), wherein the bad pixels are displayed within the selected area (also see Fig. 8).

Regarding claim 7, Cok discloses an apparatus (Fig. 1) for displaying an image generated by at least one detector of an imaging unit (image reader 20), the apparatus comprising:

means (combined processor 12 and memory 14) for creating a pixel map (Fig. 2B) identifying locations of bad pixels (defective pixels) in an array of pixels in the image detected by the at least one detector, the bad pixels behaving from a group including pixels which do not respond electrically and pixels which are statistically different from surrounding pixels in the array of pixels (see Figs. 2A-2C and col. 3, line 50 – col. 4, line 20);

means (processor 12) for linking the pixel map to the image (Fig. 2C);

means (combined processor 12, display 24 and user interface 22) for providing for selective display of the pixel map over the image selected by a user selecting a display of at least a portion of the created pixel map (see Figs. 1, 2B, 2C and col. 4, lines 13-30).

Regarding claim 8, also disclosed by Cok is means (combined processor 12 and display 24) for providing graphical symbolic representation of the bad pixels superimposed on the image (see Figs. 2A-2C, 7 & 8).

Regarding claim 9, Cok further discloses means (bus 16) for communicating the image to a storage unit (memory 14/hard disk 18), wherein the information identifying the bad pixel is communicated (see col. 3, line 55 – col. 4, line 39).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cok et al. (US 6,104,839) in view of Mangan et al. (US 5,438,573).

Regarding claim 3, the communication from the image to the storage unit (14) is disclosed by Cok in col. 3, lines 55-63. Cok is silent about that information identifying the bad pixels is communicated as an image header. However, Mangan teaches that defective cells are identified in the header file along with their addresses when the file is communicated by a processor as shown in Figs. 1-6, col. 14, lines 52-61.

It would be fast and efficient to identify the defective pixels in an image file stored in a memory by reading the image header containing the information of the addresses of defective pixels.

Therefore, it would have been obvious to those skilled in the art to modify the apparatus of Cok in view of the teaching of Mangan to provide the image header with information identifying the defective pixels so that the defective pixels would be quickly identified by the processor in an efficient manner.

7. Claims 4, 10 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cok et al. (US 6,104,839) in view of Schmitt et al. (US 6,497,511).

Regarding claims 4, 10 & 11, Cok discloses the image being communicated to a computer (Fig. 1) and wherein the information identifying the bad pixels (defective map) is communicated for use by image analysis algorithms (defect correction) executed by the computer, wherein the bad pixels are not mistaken during the examining by the user, meaning that the user can easily identify the defect pixels (26) by looking at the display during performing image correction as shown in Figs. 2A – 2C.



Cok does not disclose the defective pixels being used for analysis in medical field (i.e., X-ray image). However, Schmitt teaches a method for detecting and correcting defective pixels in an image sensor array used in the X-ray field by classifying non-defective pixels and defective pixels so that diagnostic expressiveness of an X-ray image is improved and doctors or clinicians are not misled by the defective pixels when examining the X-ray image taken by the image sensor as disclosed in Figs. 1 & 2; col. 6, lines 31-44, 54-55; col. 7, lines 45-49; col. 9, lines 18-26; col. 12, lines 5-31.

Therefore, it would have been obvious to those skilled in the art to combine the inventions from Cok and Schmitt to provide the diagnostic expressiveness of the X-ray image containing no misleading information caused by defective pixels so that the X-ray images would not be mistaken for a clinical pathology.

8. Claims 5 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cok et al. (US 6,104,839) in view of Elis et al. (US 4,974,248).

Regarding claims 5 & 12, Cok does not disclose a textual display with information identifying the bad pixels.

Elis teaches a textual display with information identifying errors or faults, such as hardware errors (inherently including bad pixels since pixels are pieces of hardware), inappropriate reference values, etc... (see Elis, col. 7, line 24 - col. 8, line 4).

Such a text message would be beneficial to the user/operator to quickly and easily recognize defective pixels in addition to graphical indication.

Therefore, it would have been obvious to one of ordinary skill in the art to enhance the visual display in Cok by including the textual display so that the user or operator would quickly and easily recognize defective pixels indicated by a text message in addition to the graphical indication.

9. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitt et al. (US 6,497,511) in view of Cok et al. (US 6,104,839).

Regarding claim 13, Schmitt discloses an apparatus for displaying an image (col. 1, lines 21-25), comprising:

an imaging unit (10, 12) for generating x-rays which pass through a body (i.e., teeth) of interest having a structure (Fig. 2; col. 2, lines 54-58);

at least one detector unit (image sensor array 12) for detecting the X-rays which pass through the body of interest to form an image, the image including an array of pixels which contain information on the structure (see col. 3, lines 6-10);

a processing unit (16, 22, 28 shown in Fig. 2) coupled to the at least one detector unit, the processing unit configured to identify bad pixels (defective image elements or pixels) within the array of pixels in the image formed by the at least one detector unit, the bad pixels behaving from a group (e.g., group 200 shown in Fig. 1) including pixels (defective pixels 7 & 19) which do not respond electrically and pixels which are statistically different from surrounding pixels in the array of pixels (see col. 6, lines 31-44);

a display coupled to the processing unit and providing visual display of the image (see col. 1, lines 21-25).

Schmitt does not explicitly disclose that the display is for selectively displaying the bad pixels over the image.

As taught by Cok, a display is provided for selectively displaying defective pixels (26) over an image (Figs. 2A-2C) so that the defective pixels in a digital image are visible to the user for accurately performing manual correction to the defective region to improve the image quality as described in col. 3, lines 20-24; col. 4, lines 5-20.

Therefore it would have been obvious to one of ordinary skill in the art to reconfigure the imaging system in Schmitt by including selectively displaying the defective pixels over the image such that the defective pixels in digital images would be visible to the user for accurate enhancement as taught by Cok above.

Regarding claim 14, Schmitt in view of Cok also discloses that a graphical overlay with graphical representations of the bad pixels superimposed on the image (see Cok, Figs. 2A-2C, 7 & 8).

Regarding claim 15, Schmitt in view of Cok also teaches that an area of the image can be selected (window 27 in Cok), wherein the bad pixels are displayed within the selected area (see Cok, Fig. 2C; col. 4, lines 21-30).

Regarding claim 16, see the combination of Schmitt and Cok as analyzed in claims 4, 10 & 11.

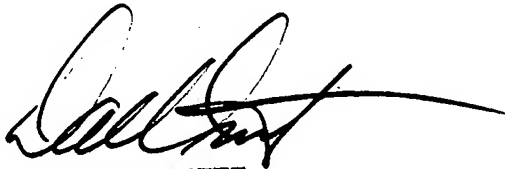
**Conclusion**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-7371. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NHAN T. TRAN  
Patent Examiner

  
DAVID OMETZ  
SUPERVISORY PATENT EXAMINER